

CLAIMS

1. A printer for printing on porous sheets of media fed from a stack of such sheets, the printer comprising

5 a gas stream supply mechanism that is configured to generate a gas stream and is positioned so that, in use, the gas stream impinges on a first sheet of the stack, the gas stream supply mechanism being configured so that the gas stream penetrates the first sheet to generate a cushion of gas between the first sheet and a second sheet, thereby lifting the first sheet from the second sheet;

10 a capturing mechanism for capturing the first sheet, the capturing mechanism being displaceable between a pick-up position in which the first sheet is captured and a feed position;

a displacement mechanism for displacing the capturing mechanism between the pick-up and feed positions;

15 a feed mechanism that is arranged downstream of the capturing mechanism and is configured to engage the first sheet as the capturing mechanism is displaced from the pick-up position to the feed position and to feed the first sheet along a printing path; and

a printing assembly that is arranged downstream of the feed mechanism to receive the first sheet and to carry out a printing operation on the first sheet.

20 2. A printer as claimed in claim 1, in which the gas stream supply mechanism includes an air displacement device having an outlet conduit and at least one outlet nozzle connected to the outlet conduit, the, or each, outlet nozzle being displaceable between a pick-up position proximate the first sheet of the stack and a feed position, the air displacement device being configured to generate a flow of air from the, or each, outlet
25 nozzle sufficient to penetrate the first sheet such that a cushion of air is generated between the first sheet and a second sheet to lift the first sheet from the second sheet.

3. A printer as claimed in claim 2, in which the capturing mechanism includes an air extraction device having an inlet conduit, at least one inlet nozzle connected to the inlet
30 conduit, the, or each, inlet nozzle defining a pick-up surface and being displaceable between the pick-up position proximate the first sheet of the stack and a feed position, the

air extraction device being configured to generate a flow of air into the, or each, inlet nozzle such that the first sheet is drawn against the pick-up surface.

4. A printer as claimed in claim 3, which includes a plurality of outlet nozzles that are positioned to span the first sheet, a plurality of inlet nozzles, also positioned to span the first sheet, an outlet manifold that interconnects the outlet conduit of the air displacement device and the outlet nozzles and an inlet manifold that interconnects the inlet conduit of the air extraction device and the inlet nozzles.

5. A printer as claimed in claim 4, in which the inlet and outlet nozzles are generally aligned and are in alternating positions with respect to each other.

6. A printer as claimed in claim 4, in which the air displacement mechanism is an air pump and the air extraction device is an evacuation pump, both pumps being connected to a shaft of the drive motor so that, when operated, the air pump serves to supply air to the outlet conduit and to draw air into the inlet conduit substantially simultaneously.

7. A sheet feeding apparatus as claimed in claim 4, in which a flexible hose interconnects each nozzle with its respective manifold, thereby facilitating displacement of the nozzles with respect to their respective manifolds.

8. A printer as claimed in claim 4, in which the displacement mechanism is a reciprocal drive mechanism for driving the inlet and outlet nozzles reciprocally between the pick-up position and the feed position.

9. A printer as claimed in claim 8, in which the nozzles are connected to an elongate carrier, which, in turn, is connected to the reciprocal drive mechanism so that the elongate carrier and thus the nozzles can be displaced reciprocally between the pick-up and feed positions.

10. A printer as claimed in claim 9, in which the elongate carrier is a bar and the drive mechanism includes a stepper motor connected to an axle that extends substantially parallel to the bar, a swing arm being interposed between each end of the axle and a corresponding

end of the bar so that reciprocal movement generated by the stepper motor can be transmitted to the bar and thus the nozzles.

11. A printer as claimed in claim 2, in which each nozzle has a sheet-engaging member
5 that, in respect of the inlet nozzles, defines the pick-up surfaces and, in respect of the outlet nozzles is such that as air is expelled from the outlet nozzles, a region of low pressure is generated intermediate the outlet nozzle and the first sheet, thereby facilitating lifting of the first sheet.
- 10 12. A printer as claimed in claim 1, in which the feed mechanism is a roller assembly.
13. A printer as claimed in claim 1, in which the printing assembly includes a pair of opposed pagewidth printheads.